86086

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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Lynda Guo Examiner #: 79756 Date: 02/05/03
Art Unit: 1651 Phone Number ~~30~~ 605-1200 Serial Number: 09/914,268
Mail Box and Bldg/Room Location: Mail 11B01 Results Format Preferred (circle): PAPER DISK E-MAIL
office: 11A16

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method & Kit for the detection of explosives

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

For Sequence Searches Only ***Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.***

Jan please.

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     (FILE 'HOME' ENTERED AT 13:27:00 ON 15 FEB 2003)
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               E WO99-IL112/AP,PRN
L1           1 S E3,E4
               E KEINAN E/AU
L2         154 S E3,E4
               E ITZHAKY H/AU
L3           6 S E4

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L4           1 S HYDROGEN PEROXIDE/CN
L5           1 S PEROXIDASE/CN
L6        2305 S ?PEROXIDAS?/CNS
L7           1 S SULFURIC ACID/CN
L8           8 S (HYDROGEN CHLORIDE OR HYDROGEN BROMIDE OR PERCHLORIC ACID OR
L9           1 S ACETIC ACID/CN
L10          1 S TRIFLUOROACETIC ACID/CN
L11          1 S 1073-91-2
L12          1 S 17088-37-8
L13          1 S DIMETHYL SULFOXIDE/CN
L14          1 S DIMETHYLFORMAMIDE/CN
L15         12 S 87-66-1 OR 89-57-6 OR 90-05-1 OR 95-54-5 OR 119-90-4 OR 525-6
L16          2 S 91-95-2 OR 521-31-3

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L17      69782 S L4
L18     161748 S HYDROGEN PEROXIDE OR H2O2
L19      30792 S L5
L20      78628 S L6
L21      77710 S ?PEROXIDASE?
L22      13125 S HORSERADISH?
L23      12502 S L20,L21 AND L22
L24      15027 S L17,L18 AND L19-L23
               E EXPLOSIVE/CT
L25       3812 S E14-E30
```

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L26           1 S E3-E12
                E E13+ALL
L27       13659 S E4,E3+NT
L28       17811 S E14+NT OR E15+NT OR E16+NT OR E18+NT OR E19+NT OR E20+NT OR E
L29       16628 S E2+NT
                E E17+ALL
L30       20127 S E2,E1+NT
L31         268 S E12+NT
                E EXPLOSIVE/SC,SX
                E EXPLO/SC,SX
L32       75270 S E5-E13
                E E11+ALL
L33       44702 S E2
                E EXPLO/SC,SX
                E E13+ALL
L34      332976 S E2
                E EXPLO/SC,SX
                E E10+ALL
L35       11903 S E2
                E EXPLO/SC,SX
                E E6+ALL
L36       63358 S E4-E7
L37           6 S L24 AND L25-L36
L38           5 S L37 NOT TYROSINE
L39          31 S L19-L23 AND L25-L36
L40          25 S L39 NOT L37
L41           1 S L39 AND L7,L8
L42           1 S L39 AND (H2SO4 OR (SULFURIC OR SULPHURIC OR SULFONIC OR SULPH
L43           1 S L39 AND (HNO3 OR H3PO4 OR H3PO2 OR HCLO4 OR HBR OR HCL OR (PH
L44           1 S L39 AND STRONG ACID
L45           1 S L39 AND ORGANIC(L)SOLVENT
L46           1 S L39 AND (ACETIC ACID OR DMSO OR DMF OR DIMETHYLSULFOXIDE OR D
L47           3 S L39 AND (CARBOXYLIC ACID OR TRIFLUOROACETIC ACID OR LOWER(L)A
L48           2 S L39 AND BUFFER?
L49           1 S L39 AND (CITRATE(S)PHOSPHATE(S)BUFFER?)
L50           3 S L39 AND L9-L16
L51           6 S L41-L50
L52           3 S L38 AND L51
                SEL RN L1

    FILE 'REGISTRY' ENTERED AT 13:59:58 ON 15 FEB 2003
L53          33 S E1-E33

    FILE 'HCAPLUS' ENTERED AT 14:00:04 ON 15 FEB 2003
L54          13 S L53 AND L39
L55           1 S L2,L3 AND L25-L36
L56           1 S L2,L3 AND L39
L57           1 S L54 AND L55,L56
L58           5 S L38,L57
L59          26 S L39-L52 NOT L58
                SEL DN AN 9 18 21
L60           3 S E34-E42
L61           8 S L58,L60 AND L1-L3,L17-L52,L54-L60
L62           7 S L53 AND L61
L63           8 S L61,L62
                E PEROXIDE/CT
L64         164 S L25-L36 AND E30-E79
                E E30+ALL
L65        1799 S L25-L36 AND E6,E5+NT
L66        1799 S L64,L65
L67           9 S L66 AND ENZYM?/SC,SX,CW,BI
L68           3 S L66 AND L19-L22
L69          10 S L67,L68
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L70             2 S L69 AND L63
L71             8 S L69 NOT L70
                  SEL DN AN 5
L72             1 S E1-E3 AND L71
L73             9 S L63,L70,L72
L74             9 S L73 AND L1-L3,L17-L52,L54-L73
L75             6 S L74 AND ENZYM?
L76             9 S L74,L75

     FILE 'HCAPLUS' ENTERED AT 14:11:08 ON 15 FEB 2003

=> d all hitstr tot l76

L76  ANSWER 1 OF 9  HCAPLUS  COPYRIGHT 2003 ACS
AN   2003:32871  HCAPLUS
DN   138:75640
TI   Trace Analysis of Peroxide-Based Explosives
AU   Schulte-Ladbeck, Rasmus; Kolla, Peter; Karst, Uwe
CS   Department of Chemical Analysis and MESA+ Research Institute, University
     of Twente, Enschede, 7500 AE, Neth.
SO   Analytical Chemistry (2003), 75(4), 731-735
     CODEN: ANCHAM; ISSN: 0003-2700
PB   American Chemical Society
DT   Journal
LA   English
CC   50-2 (Propellants and Explosives)
     Section cross-reference(s): 80
AB   The first method for quant. trace anal. of peroxide-based explosives is
     described.  A reversed-phase high-performance liq. chromatog. method with
     post-column UV irradn. and fluorescence detection for the anal. of
     triacetone triperoxide (TATP) and hexamethylene triperoxide diamine (HMTD)
     is developed.  After sepn., the analytes are degraded photochem. to
     hydrogen peroxide, which is subsequently detd. on the
     basis of the peroxidase-catalyzed oxidn. of p-
     hydroxyphenylacetic acid to the fluorescent dimer.  This two-step reaction
     scheme in combination with the resp. blanks (photochem. reactor switched
     off) provides for high selectivity.  The limits of detection were 2
     .times. 10-6 mol/L for both TATP and HMTD, resp.  The method is applied to
     the anal. of real samples.
ST   peroxide explosive reversed phase high performance liq chromatog analysis;
     triacetone triperoxide explosive trace analysis liq chromatog;
     hexamethylene triperoxide diamine explosive trace analysis liq chromatog
IT   Explosives
        (peroxide-based; trace anal. of peroxide-based explosives by
        reversed-phase high-performance liq. chromatog.
        with post-column UV irradn. and fluorescence detection)
IT   HPLC
     Trace analysis
        (trace anal. of peroxide-based explosives by reversed-phase
        high-performance liq. chromatog. with post-column UV irradn. and
        fluorescence detection)
IT   283-66-9, Hexamethylene triperoxide diamine 17088-37-8,
     Triacetone triperoxide
     RL: ANT (Analyte); TEM (Technical or engineered material use); ANST
     (Analytical study); USES (Uses)
        (trace anal. of peroxide-based explosives by reversed-phase
        high-performance liq. chromatog. with post-column UV irradn. and
        fluorescence detection)
IT   156-38-7, p-Hydroxyphenylacetic acid
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (trace anal. of peroxide-based explosives by reversed-phase
        high-performance liq. chromatog. with post-column UV irradn. and
        fluorescence detection)
```
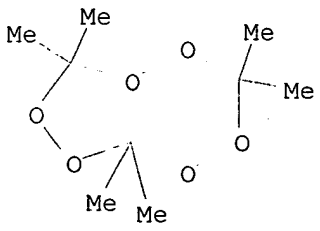

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; The Independent 1996, P7
(2) Arai, H; 4th IAFS Tokyo 1996 Fires and Explosions 1996, P209
(3) Bayer, A; Chem Ber 1900, V33, P2479
(4) Bayer, A; Chem Ber 1900, V33, P858
(5) Bellamy, A; Forensic Sci 1999, V44(3), P603 HCAPLUS
(6) Cooper, R; Los Angeles Times 2001, PA12
(7) Evans, H; Forensic Sci 1986, V31(3), P1119 HCAPLUS
(8) Groth, P; Acta Chem Scand 1969, V23(4), P1311 HCAPLUS
(9) Hong, J; Fresenius J Anal Chem 1998, V361, P124 HCAPLUS
(10) Jiang, H; J Chem Res 1999, V4, P288
(11) Lazrus, A; Anal Chem 1985, V57, P917 HCAPLUS
(12) Lazrus, A; Anal Chem 1986, V58, P594 HCAPLUS
(13) Legler, L; Chem Ber 1881, V14, P602
(14) Meyer, J; Angew Chem 2000, V112, P1510
(15) Schaefer, W; J Am Chem Soc 1985, V107, P2461 HCAPLUS
(16) Suelzle, D; Acta Chem Scand 1988, VA24, P165
(17) Sukugawa, H; Atmos Environ 1987, V21, P1791
(18) Von Grisewald, C; Chem Ber 1921, V54, P490
(19) White, G; Forensic Sci 1992, V37, P652
(20) Wolffenstein, R; Chem Ber 1895, V28, P2265
(21) Zitrin, S; Proceedings of the International Symposium on the Analysis and Detection of Explosives 1984, P137
IT **17088-37-8**, Triacetone triperoxide
RL: ANT (Analyte); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(trace anal. of peroxide-based explosives by reversed-phase high-performance liq. chromatog. with post-column UV irradn. and fluorescence detection)
RN 17088-37-8 HCAPLUS
CN 1,2,4,5,7,8-Hexoxonane, 3,3,6,6,9,9-hexamethyl- (8CI, 9CI) (CA INDEX NAME)



L76 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:682574 HCAPLUS
DN 137:364549
TI A field test for the detection of peroxide-based explosives
AU Schulte-Ladbeck, Rasmus; Kolla, Peter; Karst, Uwe
CS Department of Chemical Analysis, Research Institute, University of Twente, Enschede, 7500 AE, Neth.
SO Analyst (Cambridge, United Kingdom) (2002), 127(9), 1152-1154
CODEN: ANALAO; ISSN: 0003-2654
PB Royal Society of Chemistry
DT Journal
LA English
CC 4-2 (Toxicology)
Section cross-reference(s): 50
AB A rapid and simple field test for the detection of triacetonetriperoxide (TATP) and hexamethylenetriperoxidediamine (HMTD), two explosives which find significant illegal use, has been developed. Unknown samples are

first treated with a catalase soln. to remove **hydrogen peroxide** traces, in order to provide selectivity towards peroxide-based bleaching agents which are contained in com. laundry detergents. Subsequently, the peroxide-based explosives are decompd. via UV irradn., thus yielding **hydrogen peroxide**, which is detd. by the **horseradish peroxidase** (POD) catalyzed formation of the green radical cation of 2,2'-azino-bis(3-ethylbenzothiazoline)-6-sulfonate (ABTS). The limits of detection for this method are 8.times.10-6 mol dm-3 for TATP and 8.times.10-7 mol dm-3 for HMTD, resp. As an option, p-hydroxyphenylacetic acid (pHPAA) may be. used as **peroxidase** substrate, resulting in lower limits of detection (8.times.10-7 mol dm-3 for TATP and HMTD). The complete method uses a mobile setup to be applied under field conditions.

ST forensic peroxide explosive field test; triacetonetriperoxide explosive detection field test; hexamethylenetriperoxidediamine explosive detection field test

IT **Explosives**
Forensic analysis
(field test for detection of peroxide-based explosives)

IT 283-66-9, Hexamethylenetriperoxidediamine **17088-37-8**, Triacetonetriperoxide
RL: ANT (Analyte); ANST (Analytical study)
(field test for detection of peroxide-based explosives)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

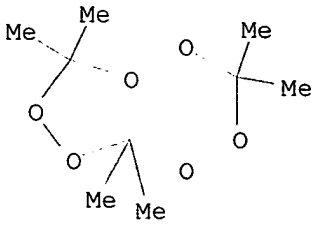
RE

(1) Anon; The Independent 1996, P7
(2) Bellamy, A; J Forensic Sci 1999, V44(3), P603 HCAPLUS
(3) Cooper, R; Los Angeles Times 2001, PA12
(4) Crowson, A; Analyst 2001, V126, P1689 HCAPLUS
(5) Evans, H; J Forensic Sci 1986, V31(3), P1119 HCAPLUS
(6) Lazrus, A; Anal Chem 1985, V57, P917 HCAPLUS
(7) Legler, L; Chem Ber 1881, V14, P602
(8) Meyer, J; Angew Chem Int Ed 2000, V39, P1453 HCAPLUS
(9) Schaefer, W; J Am Chem Soc 1985, V107, P2461 HCAPLUS
(10) Suelzle, D; Acta Chem Scand 1988, VA24, P165
(11) Sukugawa, H; Atmos Environ 1987, V21, P1791
(12) White, G; J Forensic Sci 1992, V37, P652
(13) Wolffenstein, R; Chem Ber 1895, V28, P2265
(14) Zitrin, S; Proceedings of the International Symposium on the Analysis and Detection of Explosives 1984, P137

IT **17088-37-8**, Triacetonetriperoxide
RL: ANT (Analyte); ANST (Analytical study)
(field test for detection of peroxide-based explosives)

RN 17088-37-8 HCAPLUS

CN 1,2,4,5,7,8-Hexoxonane, 3,3,6,6,9,9-hexamethyl- (8CI, 9CI) (CA INDEX NAME)



L76 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2003 ACS

AN **2000:513890** HCAPLUS

DN **133:114386**

TI Detection of small molecules by use of a piezoelectric sensor

IN Willner, Itamar; Eshhar, Zelig
PA Yissum Research Development Company of the Hebrew University of Jerusalem, Israel; Yeda Research and Development Company Ltd.
SO PCT Int. Appl., 90 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-48
CC 80-2 (Organic Analytical Chemistry)
Section cross-reference(s): 51
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000043774	A2	20000727	WO 2000-IL48	20000125
	WO 2000043774	A3	20010301		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1145006	A2	20011017	EP 2000-901308	20000125
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	IL 1999-128212	A	19990125		
	WO 2000-IL48	W	20000125		

AB App. and method of detecting assayed mols. in a sample make use of a sensing member comprising a piezoelec. crystal with a sensing surface that can interact with a medium in contact therewith by either binding a 1st indicator agent from the medium, or by releasing a 2nd indicator agent originally immobilized on the sensing surface into the medium. The binding or release causes a change in mass detectable using an elec. or electronic utility, through a change in resonance frequency. The medium interacting with the sensing member is a treated sample prepn. obtained by reacting the sample with one or both of a reagent soln. or sample-processing hardware, such that said medium comprises a 1st indicator agent or a 2nd indicator agent-releasing species at a concn. of said agent or species which is in correlation to the concn. of the assayed mols. in the sample.

ST explosive detection piezoelec sensor
IT **Explosives**
Piezoelectric materials
Piezoelectric sensors
(method and app. for detection of explosives by use of piezoelec. sensor)
IT **Enzymes**, uses
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(method and app. for detection of explosives by use of piezoelec. sensor)
IT Antibodies
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(monoclonal, 5B3; method and app. for detection of explosives by use of piezoelec. sensor)
IT **9007-43-6, Microperoxidase**, uses
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(heme peptide; method and app. for detection of explosives by use of piezoelec. sensor)

IT **9003-99-0, Peroxidase**
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**horseradish**; method and app. for detection of explosives by use of piezoelec. sensor)
IT 118-96-7, TNT 25321-14-6, DNT
RL: ANT (Analyte); ANST (Analytical study)
(method and app. for detection of explosives by use of piezoelec. sensor)
IT 9001-34-7, Galactosidase 9001-37-0, Glucoseoxidase 9001-78-9, Alkaline phosphatase
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(method and app. for detection of explosives by use of piezoelec. sensor)
IT **9007-43-6, Microperoxidase**, uses
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(heme peptide; method and app. for detection of explosives by use of piezoelec. sensor)
RN 9007-43-6 HCAPLUS
CN Cytochrome c (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9003-99-0, Peroxidase**
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**horseradish**; method and app. for detection of explosives by use of piezoelec. sensor)
RN 9003-99-0 HCAPLUS
CN Peroxidase (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L76 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:566211 HCAPLUS
DN 131:172322
TI Method and kit for **peroxidase** detection of peroxide-type concealed explosives
IN **Keinan, Ehud; Itzhaky, Harel**
PA Israel
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-28
CC **50-2** (Propellants and **Explosives**)
Section cross-reference(s): **7**, 9
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9943846	A1	19990902	WO 1999-IL112	19990224	<--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	AU 9926372	A1	19990915	AU 1999-26372	19990224	<--
PRAI	IL 1998-123451		19980225			

WO 1999-IL112 19990224 <--

AB A method, including a kit, for the detection of peroxide-based explosives in a sample is comprised of: (1) dissolving the sample in an **org**. **solvent**, (2) contacting the dissolved sample with an aq. **strong acid** to decomp. the explosive and release **H2O2**, and (3) contacting the resulting mixt. with a **peroxidase enzyme** in an aq. **buffer** (i.e., to pH 5.0-9.0, with a 0.01-0.5 M **citrate/phosphate buffer**), such that a substrate (indicator) reacts to produce a noticeable change in the soln. (preferably a color change). A preferred **peroxidase** is **horseradish peroxidase**; suitable **strong acids** are chosen from inorg. acids (**H2SO4**, **HCl**, **HBr**, **HClO4**, **H3PO2**, H3PO3, **H3PO4**, and **HNO3**). Suitable substrates (i.e., indicators) include 2,2'-azinobis(3-ethylbenzthiazoline-6-**sulfonic acid**) diammonium salt, 2,7-diaminofluorene, 3,3',5,5'-tetramethylbenzidine, 5-aminosalicylic acid, o-phenylenediamine, 5-amino-2,3-dihydro-1,4-phthalazinedione, 3-amino-9-ethylcarbazole, 4-chloro-1-naphthol, 3,3'-diaminobenzidine, o-dianisidine, guaiacol, and pyrogallol. The method is esp. useful for detection of N-free peroxide-type explosives, esp. triacetone triperoxide and diacetone diperoxide.

ST peroxide explosive **enzymic** detection; **peroxidase** detection concealed peroxide explosive; **hydrogen peroxide enzymic** detection

IT **Peroxides, reactions**
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)
(detection of; method and kit for **peroxidase** detection of peroxide-type concealed explosives)

IT Alcohols, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(lower, solvents; method and kit for **peroxidase** detection of peroxide-type concealed explosives)

IT **Explosives**
(method and kit for **peroxidase** detection of peroxide-type concealed explosives)

IT **Carboxylic acids**, analysis
Sulfonic acids, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(solvents; method and kit for **peroxidase** detection of peroxide-type concealed explosives)

IT **6303-21-5, Phosphinic acid 7601-90-3**, **Perchloric acid**, uses **7647-01-0**, **Hydrogen chloride**, uses **7664-38-2**, **Phosphoric acid**, uses **7664-93-9**, **Sulfuric acid**, uses **7697-37-2, Nitric acid**, uses **10035-10-6, Hydrogen bromide**, uses **13598-36-2, Phosphorous acid**, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(aq. **strong acid**; method and kit for **peroxidase** detection of peroxide-type concealed explosives)

IT **1073-91-2 17088-37-8**, Triacetone triperoxide
RL: ANT (Analyte); ANST (Analytical study)
(detection of; method and kit for **peroxidase** detection of peroxide-type concealed explosives)

IT **7722-84-1, Hydrogen peroxide**, reactions
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(formation and **enzymic** detection of; method and kit for **peroxidase** detection of peroxide-type concealed explosives)

IT **9003-99-0, Peroxidase**
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); CAT (Catalyst use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(**horseradish**; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
IT **87-66-1**, Pyrogallol **89-57-6**, 5-Aminosalicylic acid **90-05-1**, Guaiacol **91-95-2**, [1,1'-Biphenyl]-3,3',4,4'-tetramine **95-54-5**, o-Phenylenediamine, uses **119-90-4**, o-Dianisidine **132-32-1**, 3-Amino-9-ethylcarbazole **521-31-3 525-64-4**, 2,7-Diaminofluorene **604-44-4**, 4-Chloro-1-naphthol **615-28-1**, o-Phenylenediamine dihydrochloride **20325-40-0**, o-Dianisidine dihydrochloride **30931-67-0**, 6-Benzothiazolesulfonic acid, 2,2'-azinobis[3-ethyl-2,3-dihydro-, diammonium salt **54827-17-7**, 3,3',5,5'-Tetramethylbenzidine **64285-73-0**, 3,3',5,5'-Tetramethylbenzidine dihydrochloride
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(indicator; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
IT **64-19-7, Acetic acid**, analysis **67-68-5**, **Dimethylsulfoxide**, analysis **68-12-2**, analysis **76-05-1**, analysis **109-99-9**, analysis **123-91-1**, 1,4-Dioxane, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(solvent; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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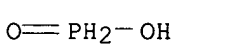
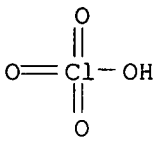
(2) Chisso Corporation; GB 1177516 A 1970
(3) Fospur Ltd; WO 7900122 A 1979 HCAPLUS
(4) Keuchel, C; ANAL SCI 1992, V8(1), P9 HCAPLUS
(5) Secr Defence; GB 2314156 A 1997 HCAPLUS
IT **6303-21-5, Phosphinic acid 7601-90-3**, **Perchloric acid**, uses **7647-01-0**, **Hydrogen chloride**, uses **7664-38-2**, **Phosphoric acid**, uses **7664-93-9**, **Sulfuric acid**, uses **7697-37-2, Nitric acid**, uses **10035-10-6, Hydrogen bromide**, uses **13598-36-2, Phosphorous acid**, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(aq. **strong acid**; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
RN 6303-21-5 HCAPLUS
CN Phosphinic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



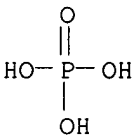
RN 7601-90-3 HCAPLUS
CN Perchloric acid (8CI, 9CI) (CA INDEX NAME)



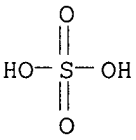
RN 7647-01-0 HCAPLUS
CN Hydrochloric acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

HCl

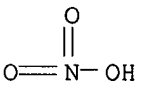
RN 7664-38-2 HCAPLUS
CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7664-93-9 HCAPLUS
CN Sulfuric acid (8CI, 9CI) (CA INDEX NAME)



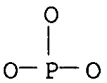
RN 7697-37-2 HCAPLUS
CN Nitric acid (8CI, 9CI) (CA INDEX NAME)



RN 10035-10-6 HCAPLUS
CN Hydrobromic acid (8CI, 9CI) (CA INDEX NAME)

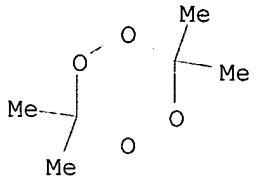
HBr

RN 13598-36-2 HCAPLUS
CN Phosphonic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

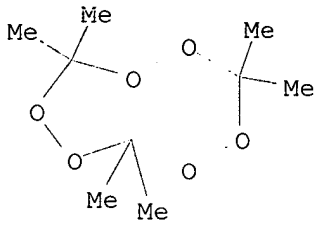


*** FRAGMENT DIAGRAM IS INCOMPLETE ***

IT **1073-91-2 17088-37-8**, Triacetone triperoxide
RL: ANT (Analyte); ANST (Analytical study)
(detection of; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
RN 1073-91-2 HCAPLUS
CN 1,2,4,5-Tetroxane, 3,3,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 17088-37-8 HCAPLUS
CN 1,2,4,5,7,8-Hexoxonane, 3,3,6,6,9,9-hexamethyl- (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1**, **Hydrogen peroxide**, reactions
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(formation and **enzymic** detection of; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

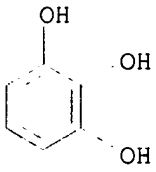
HO—OH

IT **9003-99-0**, **Peroxidase**
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); CAT (Catalyst use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(**horseradish**; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
RN 9003-99-0 HCAPLUS
CN Peroxidase (9CI) (CA INDEX NAME)

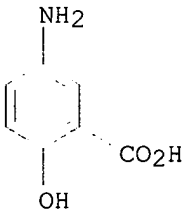
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **87-66-1**, Pyrogallol **89-57-6**, 5-Aminosalicylic acid **90-05-1**, Guaiacol **91-95-2**, [1,1'-Biphenyl]-3,3',4,4'-tetramine **95-54-5**, o-Phenylenediamine, uses **119-90-4**, o-Dianisidine **132-32-1**, 3-Amino-9-ethylcarbazole **521-31-3 525-64-4**, 2,7-Diaminofluorene **604-44-4**, 4-Chloro-1-naphthol **615-28-1**, o-Phenylenediamine dihydrochloride **20325-40-0**, o-Dianisidine dihydrochloride **30931-67-0**, 6-Benzothiazolesulfonic acid, 2,2'-azinobis[3-ethyl-2,3-dihydro-, diammonium salt **54827-17-7**, 3,3',5,5'-

Tetramethylbenzidine **64285-73-0**, 3,3',5,5'-Tetramethylbenzidine dihydrochloride
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(indicator; method and kit for **peroxidase** detection of peroxide-type concealed explosives)

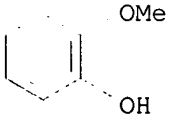
RN 87-66-1 HCAPLUS
CN 1,2,3-Benzenetriol (9CI) (CA INDEX NAME)



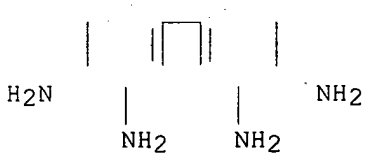
RN 89-57-6 HCAPLUS
CN Benzoic acid, 5-amino-2-hydroxy- (9CI) (CA INDEX NAME)



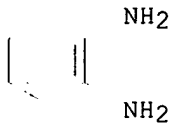
RN 90-05-1 HCAPLUS
CN Phenol, 2-methoxy- (9CI) (CA INDEX NAME)



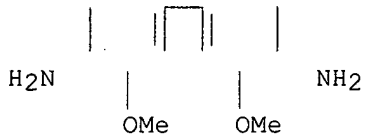
RN 91-95-2 HCAPLUS
CN [1,1'-Biphenyl]-3,3',4,4'-tetramine (9CI) (CA INDEX NAME)



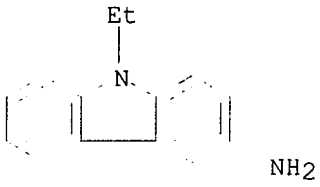
RN 95-54-5 HCAPLUS
CN 1,2-Benzenediamine (9CI) (CA INDEX NAME)



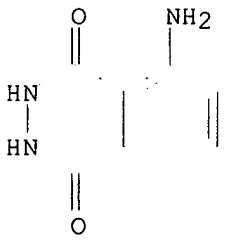
RN 119-90-4 HCAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy- (9CI) (CA INDEX NAME)



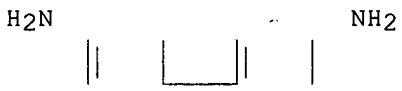
RN 132-32-1 HCAPLUS
CN 9H-Carbazol-3-amine, 9-ethyl- (9CI) (CA INDEX NAME)



RN 521-31-3 HCAPLUS
CN 1,4-Phthalazinedione, 5-amino-2,3-dihydro- (6CI, 8CI, 9CI) (CA INDEX NAME)

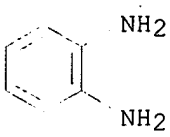


RN 525-64-4 HCAPLUS
CN 9H-Fluorene-2,7-diamine (9CI) (CA INDEX NAME)



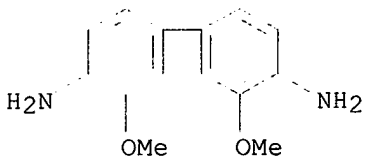
RN 604-44-4 HCAPLUS
CN 1-Naphthalenol, 4-chloro- (9CI) (CA INDEX NAME)

RN 615-28-1 HCAPLUS
CN 1,2-Benzenediamine, dihydrochloride (9CI) (CA INDEX NAME)



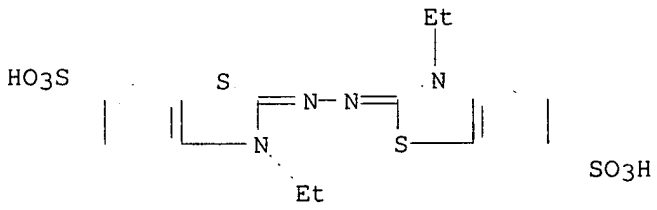
2 HCl

RN 20325-40-0 HCAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-, dihydrochloride (9CI) (CA INDEX NAME)



●2 HCl

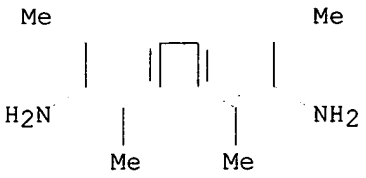
RN 30931-67-0 HCAPLUS
CN 6-Benzothiazolesulfonic acid, 2,2'-azinobis[3-ethyl-2,3-dihydro-, diammonium salt (9CI) (CA INDEX NAME)



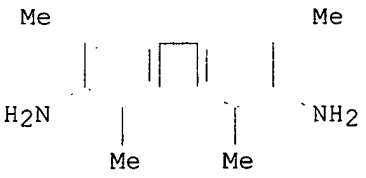
2 NH_3

RN 54827-17-7 HCAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, 3,3',5,5'-tetramethyl- (9CI) (CA INDEX

NAME)

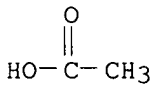


RN 64285-73-0 HCAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, 3,3',5,5'-tetramethyl-, dihydrochloride (9CI) (CA INDEX NAME)

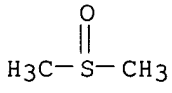


●2 HCl

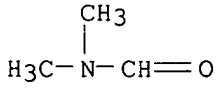
IT **64-19-7**, **Acetic acid**, analysis **67-68-5**, **Dimethylsulfoxide**, analysis **68-12-2**, analysis **76-05-1**, analysis **109-99-9**, analysis **123-91-1**, 1,4-Dioxane, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study) (solvent; method and kit for **peroxidase** detection of peroxide-type concealed explosives)
RN 64-19-7 HCAPLUS
CN Acetic acid (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 67-68-5 HCAPLUS
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)

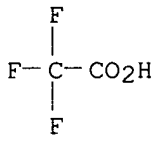


RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



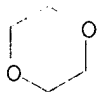
RN 76-05-1 HCAPLUS

CN Acetic acid, trifluoro- (8CI, 9CI) (CA INDEX NAME)



RN 109-99-9 HCAPLUS
CN Furan, tetrahydro- (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 123-91-1 HCAPLUS
CN 1,4-Dioxane (9CI) (CA INDEX NAME)



L76 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:343009** HCAPLUS
DN **129:69584**
TI Analysis of explosives by infrared spectrometry and mass spectrometry
AU Zitrin, Shmuel
CS Chemistry and Biology Section, Division of Identification and Forensic Science, National Israel Police Headquarters, Jerusalem, Israel
SO Forensic Investigation of Explosions (1998), 267-314. Editor(s): Beveridge, Alexander. Publisher: Taylor & Francis, London, UK. CODEN: 66EBA5
DT Conference; General Review
LA English
CC **50-0** (Propellants and **Explosives**)
Section cross-reference(s): **7**, 73
AB A review, with 139 refs., of forensic anal. of explosives and explosive residues by IR and mass spectrometry, with emphasis on: criteria for identification, mass spectrometry in post-explosion anal., and anal. of inorg. ions. Other topics discussed include advantages and applicability of IR and mass spectrometries for explosives anal., typical IR and mass spectra of certain functional groups (i.e., the nitro group, nitroarom. compds., nitrate esters, and nitramines), org. peroxides, inorg. explosives, non-explosive additives, and types of mass spectrometry (neg.-ion, gas chromatog.-mass spectrometry interface, and mass spectrometry-mass spectrometry), anal. of energetic polycyclic cage compds., stabilizers, sugars, and reducing agents; effect of hydrolysis of nitrate groups; and trace analyses of inorg. anions. Case studies included: (1) forensic Semtex analyses, (2) anal. of a pipe bomb residues, and (3) identification of RDX and PETN from residues and reaction products.
ST review forensic analysis explosive; IR spectrometry explosive forensic review; mass spectrometry explosive forensic review
IT Nitro group
(IR and mass spectra of; in forensic anal. of explosives and explosive

residues by IR and mass spectrometry)
IT Nitramines
RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(IR and mass spectra of; in forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT Nitro compounds
RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(arom.; in forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT Chlorates
Perchlorates
RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(explosives, IR and mass spectra of; forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT **Explosives**
Forensic analysis
IR spectroscopy
Mass spectrometry
(forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT Mass spectrometry
(gas chromatog. combined with; in forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT Nitrates, uses
RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(inorg., explosives, IR and mass spectra of; forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT Gas chromatography
(mass spectrometry combined with; in forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT Aromatic compounds
RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(nitro; in forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT IR spectra
Mass spectra
(of functional groups; in forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT **Peroxides, uses**
RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(**org.**, IR and mass spectra of; in forensic anal. of explosives and explosive residues by IR and mass spectrometry)
IT 7697-37-2D, Nitric acid, org. esters, uses
RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(explosives, IR and mass spectra of; forensic anal. of explosives and explosive residues by IR and mass spectrometry)
RE.CNT 139 THERE ARE 139 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(2) Alm, A; Explosivstoffe 1969, V17, P156 HCAPLUS
(3) Almog, J; Journal of Energetic Materials 1986, V4, P159 HCAPLUS
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(5) Bamberger, Y; Proceedings 3rd International Symposium on Analysis and Detection of Explosives 1989, P26.1
(6) Bamberger, Y; Proceedings 3rd International Symposium on Analysis and Detection of Explosives 1989, P4.1

(7) Basch, A; Journal of Energetic Materials 1986, V4, P77 HCAPLUS
(8) Beberich, D; Journal of Forensic Sciences 1988, V33, P946
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L76 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN 1996:557987 HCAPLUS
DN 125:211467
TI Automatic quantitative determination of materials using **enzyme** -immunological processes
IN Bannierink, Stephan; Brues, Ulrich
PA Meta Mestechnische Systeme GmbH, Germany
SO Ger. Offen., 4 pp.
CODEN: GWXXBX

DT Patent
LA German
IC ICM G01N035-00
ICS G01N033-53; C12Q001-00; C12Q001-28
CC 80-6 (Organic Analytical Chemistry)
Section cross-reference(s): 4, 5, 9, **50**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 19606267	A1	19960822	DE 1996-19606267	19960221
PRAI DE 1996-19606267		19960221		

AB A description is given of an immunol. process for the continuous quant. detn. of materials such as pesticides and their decompn. products, explosives and their decompn. products, as well as hormones, mushroom poisons, antibiotics and endotoxins. The **enzyme**-immunol. process uses a flow injection system which provides fresh antibodies for each anal. in the system and it is connected in the affinity reactor to Protein A/G. The entire analyte detection reaction is performed on the affinity reactor. After the measurement the affinity reactor is reactivated with a regeneration agent. Fluorescence detection using HPPA/ **H2O2** as the substrate with an excitation wavelength range of 280-300 nm and an emission range of 420-440 nm is used. The immunol. process is automated and uses **horseradish peroxidase**.
ST org compd detn **enzyme** immunoassay
IT Antibiotics
Explosives
Pesticides
(org. compds. detn. by automated **enzyme**-immunol. process using **horseradish peroxidase**)
IT Hormones
RL: ANT (Analyte); ANST (Analytical study)
(org. compds. detn. by automated **enzyme**-immunol. process using **horseradish peroxidase**)
IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(endo-, org. compds. detn. by automated **enzyme**-immunol. process using **horseradish peroxidase**)
IT **9003-99-0, Peroxidase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**horseradish**; org. compds. detn. by automated **enzyme** -immunol. process using **horseradish peroxidase**)
IT **9003-99-0, Peroxidase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**horseradish**; org. compds. detn. by automated **enzyme** -immunol. process using **horseradish peroxidase**)
RN 9003-99-0 HCAPLUS
CN Peroxidase (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L76 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN **1992:165556** HCAPLUS
DN **116:165556**
TI **Enzyme**-linked immunosorbent assay for the determination of 2,4,6-trinitrotoluene and related nitroaromatic compounds
AU Keuchel, Claudia; Weil, Ludwig; Niessner, Reinhard
CS Inst. Hydrochem., Tech. Univ. Munich, Munich, D-8000/70, Germany
SO Analytical Sciences (1992), 8(1), 9-12
CODEN: ANSCEN; ISSN: 0910-6340
DT Journal
LA English
CC 80-6 (Organic Analytical Chemistry)
Section cross-reference(s): **50**, 61

AB A sensitive ELISA for the detn. of the explosive 2,4,6-trinitrotoluene (TNT) and other nitroarom. compds. was developed. As tracer, a trinitrophenyl-deriv. conjugated to **horseradish peroxidase** was used. With this competitive assay, performed in polystyrene microtiter plates, TNT can be detected within the range of 0.02 .mu.g/L and 20 .mu.g/L. Cross-reactivities at the center points (50% values) of several nitroarom. compds. were detd. Addnl., the cross-reactivities at different concns. of the analytes were stated to yield a more realistic estn. of the interferences. Finally, the applicability of the immunoassay to the detn. of TNT in water samples was assessed.

ST trinitrotoluene detn **enzyme** linked immunosorbent assay; nitroarom detn **enzyme** linked immunosorbent assay; water analysis trinitrotoluene immunosorbent assay

IT Immunoglobulins
RL: ANST (Analytical study)
(G, in trinitrotoluene detn. by ELISA technique)

IT Nitro compounds
RL: ANT (Analyte); ANST (Analytical study)
(aryl, detn. of, by ELISA technique)

IT Aromatic compounds
RL: ANT (Analyte); ANST (Analytical study)
(nitro, detn. of, by ELISA technique)

IT 107-95-9D, 3-Aminopropionic acid, reaction products with trinitrobenzenesulfonic acid and **peroxidase** 2508-19-2D, Trinitrobenzenesulfonic acid, reaction products with aminopropionic acid and **peroxidase 9003-99-0D, Peroxidase,** conjugates with nitro-substituted **carboxylic acid**
RL: ANST (Analytical study)
(as tracer for detn. of trinitrotoluene by ELISA technique)

IT 118-96-7, 2,4,6-Trinitrotoluene
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by ELISA technique)

IT 7732-18-5, Water, analysis
RL: AMX (Analytical matrix); ANST (Analytical study)
(trinitrotoluene detn. in, by using ELISA technique)

IT **9003-99-0D, Peroxidase,** conjugates with nitro-substituted **carboxylic acid**
RL: ANST (Analytical study)
(as tracer for detn. of trinitrotoluene by ELISA technique)

RN 9003-99-0 HCAPLUS

CN Peroxidase (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L76 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:194550 HCAPLUS

DN 114:194550

TI **Enzymatically** controlled iodination reactions in the terrestrial environment

AU Christiansen, Jesper V.; Carlsen, Lars

CS Chem. Dep., Risoe Natl. Lab., Roskilde, DK-4000, Den.

SO Radiochimica Acta (1991), 52-53(Pt. 2), 327-33
CODEN: RAACAP; ISSN: 0033-8230

DT Journal

LA English

CC **71-10** (Nuclear Technology)
Section cross-reference(s): 19

AB Humic acids are iodinated either by elemental iodine/hypoiodous acid or by iodide in the presence of **enzymes** of the **peroxidase** group and **hydrogen peroxide**. The resulting iodinated humic acids show a uniform distribution of the iodine independent of the single mol. wt. fractions. It is demonstrated that the

enzymically controlled iodination reactions can be rationalized as applying to a rather simple equil. model taking only the concns. of the sites available for iodination and the initial iodide concns. into account together with the concn. of the iodinated states. Deiodination expts. suggest that 3 different types of sites available for iodination are present, distinguishable due to the deiodination mechanisms. The possible influence of the findings on the migration behavior of radioiodide in the terrestrial environment is discussed.

ST **enzyme peroxidase** control iodination humic acid

IT **Enzymes**
RL: PROC (Process)
(control of humic acid iodination reaction by **peroxidase** -group)

IT Radioactive wastes
(disposal of, **enzymically** controlled humic acid iodination reaction in relation to)

IT Humic acids
RL: RCT (Reactant); RACT (Reactant or reagent)
(iodination of, in presence of **enzymes**, radioiodine migration in terrestrial environment in relation to)

IT Iodination
(of humic acids, **enzymically** controlled)

IT Diffusion
(of radioiodine in terrestrial environment, **enzymically** controlled iodination reactions in relation to)

IT **9003-99-0, Peroxidase 9055-20-3**
RL: PROC (Process)
(control of humic acid iodination reaction by)

IT **7722-84-1, Hydrogen peroxide**, uses and miscellaneous
RL: USES (Uses)
(**enzymically** controlled iodination reaction of humic acid in presence of)

IT 7553-56-2
RL: PROC (Process)
(iodination, of humic acids, **enzymically** controlled)

IT 7553-56-2, Iodine, properties
RL: PRP (Properties)
(migration of radioactive, in terrestrial environment, **enzymically** controlled iodination reactions in relation to)

IT **9003-99-0, Peroxidase 9055-20-3**
RL: PROC (Process)
(control of humic acid iodination reaction by)

RN 9003-99-0 HCAPLUS
CN Peroxidase (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 9055-20-3 HCAPLUS
CN Peroxidase, chloride (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7722-84-1, Hydrogen peroxide**, uses and miscellaneous
RL: USES (Uses)
(**enzymically** controlled iodination reaction of humic acid in presence of)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

L76 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN **1989:627113** HCAPLUS
DN **111:227113**
TI Detection of organonitro compounds (explosives) in air by immunoassay
IN Mitsumata, Tadayasu; Miyazaki, Kimimasa; Takeya, Makoto; Sugihara, Hirokazu
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N033-53
ICS G01N033-577
ICA C12Q001-00
CC 4-2 (Toxicology)
Section cross-reference(s): 15
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 01012266	A2	19890117	JP 1987-168041	19870706
PRAI JP 1987-168041		19870706		

AB An organonitro compd. to be detected is chem. bound to a protein and animals are immunized with the conjugate to produce an antibody for use in the detection of the organonitro compd. in air by EIA or other immunoassays. Nitro compds. in air samples are concd. with an app. based on the soln. method or adsorption method (no data). Thus, an antibody to nitroglycerin was prepd. by the conventional method for use in the detection of nitroglycerin by ELISA (competitive method) using a microplate-immobilized nitroglycerin, **peroxidase**-labeled anti-mouse IgG antibody, and the antibody.
ST air organonitro compd antibody immunoassay; nitroglycerin ELISA air
IT Nitro compounds
RL: ANT (Analyte); ANST (Analytical study)
(detection of, in air, by immunoassays)
IT **Explosives**
(nitro compds. as, detection of, in air, by immunoassays)
IT Legal chemistry and medicine
(organonitro compd. detection in air by immunoassays in relation to)
IT Air analysis
(organonitro compd. detection in, by ELISA or other immunoassays)
IT Antibodies
RL: BIOL (Biological study)
(to organonitro compds., for ELISA and other immunoassays)
IT Immunochemical analysis
(**enzyme** immunoassay, of organonitro compds. in air)
IT Immunochemical analysis
(**enzyme**-linked immunosorbent assay, of organonitro compds. in air)
IT Immunochemical analysis
(immunoassay, of organonitro compds. in air)
IT Antibodies
RL: BIOL (Biological study)
(monoclonal, to organonitro compds., for ELISA and other immunoassays)
IT 55-63-0, Nitroglycerin
RL: ANT (Analyte); ANST (Analytical study)
(detection of, in air, by immunoassay)

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L102 ANSWER 1 OF 6 WPIX (C) 2003 THOMSON DERWENT
AN **1999-550873** [46] WPIX
DNC **C1999-160654**
TI Detecting **peroxide**-based **explosive** in sample.
DC D16 E19 J04 **K04**
IN ITZHAKY, H; KEINAN, E
PA (ITZH-I) ITZHAKY H; (KEIN-I) KEINAN E
CYC 84
PI WO 9943846 A1 19990902 (199946)* EN 19p C12Q001-28 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 9926372 A 19990915 (200004) C12Q001-28 <--
ADT WO 9943846 A1 WO 1999-IL112 19990224; AU 9926372 A AU 1999-26372 19990224
FDT AU 9926372 A Based on WO 9943846
PRAI IL 1998-123451 19980225
IC ICM **C12Q001-28**
AB WO 9943846 A UPAB: 19991110
NOVELTY - A method of detecting **peroxide**-based **explosive** in a sample by dissolving the sample in a suitable organic solvent, contacting the solution with a strong acid solution and contacting the resulting mixture with a **peroxidase** enzyme, a buffer to adjust the pH, and a substrate capable of being oxidized by the oxidant.
DETAILED DESCRIPTION - A method of detecting **peroxide**-based **explosive** in a sample comprises contacting a solution of the sample in an organic solvent with an aqueous solution of a strong acid to decompose **explosive** and release **hydrogen** **peroxide**, contacting the mixture with a **peroxidase**

enzyme, buffer to adjust pH to permit action of the enzyme and a substrate capable of being oxidized by oxidant under catalysis of the enzyme to produce pronounced change in a measurable physical parameter. An INDEPENDENT CLAIM is also included for a kit for use in the above method, the kit comprising packaged organic solvent, packaged aqueous solution of the strong acid, packaged buffer, packaged **peroxidase** enzyme and packaged substrate.

USE - For detecting **peroxide**-based **explosive** in sample.

ADVANTAGE - The reliable method and portable kit provide fast and easy detection of **peroxide**-based **explosives**.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: D05-H09; E06-D06; E06-D13; E06-F01; E08-D03; **E10-A04B**; E10-B01A2; E10-B01A4; E10-B02A; E10-E02D3; E10-E02F1; E10-E02F2; E11-Q03; E31-B03C; E31-B03D; E31-C; **E31-E**; E31-F05; E31-H05; E31-K05A; E31-K07; J04-C04; **K04-F**

TECH UPTX: 19991110

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Method: The physical parameter of the substrate is its color or color intensity. The concentration of the aqueous H2SO4 solution is 5-95 (especially 10-50) vol%. The pH is adjusted by the buffer to 5-9 and the buffer is 0.01-0.5 M citrate/phosphate buffer. The sample is introduced into a mixture of the organic solvent and the aqueous solution of the strong acid and the **peroxidase** enzyme or the buffer or the buffer, the enzyme and the substrate are combined with the buffer prior to being contacted with the resulting mixture.

Preferred Kit: The kit comprises several ampoules containing the enzyme or the buffer and the enzyme or the buffer, the enzyme and the substrate. The kit also comprises several small open receptacles for carrying out the test.

ABEX

SPECIFIC COMPOUNDS - The solvent is selected from tetrahydrofuran (THF), 1,4-dioxane, lower alkanols, dimethylsulfoxide (DMSO), N,N-dimethylforamide (DMF), carboxylic acids, especially acetic acid and tetrafluoroacetic acid (TFA) and sulfonic acids (more especially acetic acid). The strong acid is H2SO4, HCl, HBr, HClO4, H3PO2, H3PO3, H3PO4 or HNO3 (espcially H2SO4).The **peroxidase** enzyme is Horseradish **peroxidase**. The substrate is selected from 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid) diammonium salt, 2,7-diaminofluorene, 3,3',5,5'-tetramethylbenzidine and its dihydrochloride salt, 5-aminosalicylic acid, o-phenylenediamine and its dihydrochloride salt, 5-amino-2,3-dihydro-1,4-pthalazinedione, 3-amino-9-ethylcarbazole, 4-chloro-1-naphthol, 3,3'-diaminobenzidine, o-dianisidine and its dihydrochloride salts, guiacol and pyragallol.

EXAMPLE - A few crystals of **triacetonetriperoxide** (1-2 mg) were placed in a shalow well, 0.1 ml of 1,4-dioxane added and 0.1 ml of 50 vol% H2SO4 in water. The mixture was allowed to stand for 30 seconds and 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid) diammonium salt in 0.2 ml citrate/phosphate buffer (0.1 M at pH 5) was added, followed by 0.05 ml of Horseradish **peroxidase** (5 mg/ml) in citrate/phosphate buffer (0.1 M at pH 5). An intense bluish-green color developed in less than 30 seconds.

L102 ANSWER 2 OF 6 WPIX (C) 2003 THOMSON DERWENT

AN **1997-098393** [09] WPIX

DNN **N1997-081512** DNC **C1997-031275**

TI A disinfecting compsn. for industrial use - contains a filler or solvent, **peroxide** cpds. and carboxylic acids as modifier.

DC D22 P34

IN MAKSIMETS, V A

PA (MAKS-I) MAKSIMETS V A

CYC 1
PI RU 2061499 C1 19960610 (199709)* 15p A61L002-16
ADT RU 2061499 C1 RU 1992-6721 19921026
PRAI RU 1992-6721 19921026
IC ICM A61L002-16
AB RU 2061499 C UPAB: 19970228
A disinfecting compsn. contains an activating substance and a modifier. It also contains a filler or a solvent, and the active substance is one or several liq. or crystalline **peroxide** cpds. The modifier is one or several liq. or crystalline carboxylic acids and/or their derivs. as modifiers. The proportions of the ingredients are (wt. %): 0.01-99.0 **peroxide** cpd., 0.01-99.0 modifier, remainder filler or solvent.
The LD50 values for **hydrogen peroxide**, i.p. and p.o. in mice were 280-880 and 2000-2538 mg/kg respectively. Those for performic and peracetic acids, p.o in mice were both 210 mg/kg (no data given for citric acid).
USE - The compsn. is useful in all branches of industry and domestically.
ADVANTAGE - The new compsn. avoids some of the drawbacks of previous compsns. e.g. low stability, high toxicity, high corrosiveness for metals, **explosion** and fire risk, the use of **peroxidase**, which is scarce and expensive.
Dwg.0/0
FS CPI GMPI
FA AB
MC CPI: D03-H02; D08-B09A; D09-A01A

L102 ANSWER 3 OF 6 WPIX (C) 2003 THOMSON DERWENT
AN **1990-186656** [25] WPIX
DNN **N1990-145188** DNC **C1990-080908**
TI Enzyme-coated **hydrogen peroxide** detection electrodes - engage flow channel through housing at offset-locations.
DC B04 D16 J04 S03
IN KOHNO, T
PA (HORB) HORIBA LTD
CYC 2
PI DE 3933718 A 19900613 (199025)*
DE 3933718 C 19911128 (199148)
US 5182004 A 19930126 (199307) 7p G01N027-26
ADT DE 3933718 A DE 1989-3933718 19891009; US 5182004 A US 1989-437346 19891115
PRAI JP 1988-160475U 19881210
IC ICM G01N027-26
ICS G01N027-30
AB DE 3933718 A UPAB: 19930928
Hydrogen peroxide. and materials with like action are detected and measured while continuously flowing in specimen liq. through a tubular cathode (9) embedded in a housing (1), as is the contact bed (11) to an external terminal (10). The corresp. anode (14) is held in a section of the flow channel not in alignment with the main section, with the anode mounted on the end of a carrier (13) screwed into the housing, and compressively engaging a sealing ring (19) forming one well of the flow channel. The anode may be a circular disc, with a concave surface engaging the advancing carrier end. Electrodes are pref. of type with a reactive enzyme crating.
ADVANTAGE - Prolonged **explosive** to specimen ensures sensitive detection and measurement of very small amts. of **H2O2**.
@
1/4@
FS CPI EPI
FA AB; GI; DCN
MC CPI: **B04-B02C**; **B05-C08**; B11-C08B; B12-K04E; D05-A01C1; D05-H09; J04-B01

EPI: S03-E03C
ABEQ DE 3933718 C UPAB: 19930928
Hydrogen peroxide. and materials with like action are detected and measured while continuously flowing in specimen liq. through a tubular cathode (9) embedded in a housing (1), as is the contact bed (11) to an external terminal (10). The corresp. anode (14) is held in a section of the flow channel not in alignment with the main section, with the anode mounted on the end of a carrier (13) screwed into the housing, and compressively engaging a sealing ring (19) forming one well of the flow channel. The anode may be a circular disc, with a concave surface engaging the advancing carrier end. Electrodes are pref. of type with a reactive enzyme crating.
ADVANTAGE - Prolonged **explosive** to specimen ensures sensitive detection and measurement of very small amts. of **H2O2**.
1/4
ABEQ US 5182004 A UPAB: 19930928
Flow-through H **peroxide** electrode assembly, used as enzyme electrode, has a rectangular, cubic etc. body (1) of transparent resin, with sample liq. inlet (2) in one endface and outlet (3) at the other endface. Cylindrical hollow cathode (9) is opened into the inlet and a cylindrical insulated anode support body (13) supports a disc anode (14) downstream of the cathode and contacting the liq. stream. A screw cap (17) presses the support downwards to press the diode against rubber packing (19).
ADVANTAGE - Adequate electrode output with small amts. of sample.
1/4

L102 ANSWER 4 OF 6 WPIX (C) 2003 THOMSON DERWENT
AN **1987-102607** [15] WPIX
DNC **C1987-042599**
TI Stabilised **hydrogen peroxide** solns. at below pH7 - contain aromatic poly sulphonic acid or salts esp. for rocket propulsion, as bleaching agent, in pharmaceuticals and in analytical reagents.
DC B06 D21 E14 E16 **K04**
IN MALIN, M J; SCLAFANI, L D
PA (TECD) TECHNICON INSTR CORP
CYC 18
PI EP 218097 A 19870415 (198715)* EN 14p
R: BE CH DE FR GB IT LI NL SE
AU 8662015 A 19870305 (198716)
JP 62070205 A 19870331 (198718)
BR 8604193 A 19870428 (198723)
DK 8604191 A 19870304 (198728)
US 4744968 A 19880517 (198822) 4p
ES 2002124 A 19880716 (198925)
CA 1259470 A 19890919 (198943)
EP 218097 B 19920115 (199203)
R: BE CH DE FR GB IT LI NL SE
DE 3683435 G 19920227 (199210)
JP 04048721 B 19920807 (199236) 5p C01B015-037
DK 166961 B 19930809 (199337) C01B015-037
ADT EP 218097 A EP 1986-112199 19860903; JP 62070205 A JP 1986-207635 19860903; US 4744968 A US 1985-772114 19850903; ES 2002124 A ES 1986-1532 19860901; JP 04048721 B JP 1986-207635 19860903; DK 166961 B DK 1986-4191 19860902
FDT JP 04048721 B Based on JP 62070205; DK 166961 B Previous Publ. DK 8604191
PRAI US 1985-772114 19850903
REP 1.Jnl.Ref; A3...8801; DE 2906952; FR 2160640; JP 53102296; No-SR.Pub; US 3801512; US 4132762
IC ICM C01B015-037
ICS C01B015-03; C09K015-12
AB EP 218097 A UPAB: 19930922
Stabilised aq. **H2O2** soln. is at below pH7 and contains an

aromatic polysulphonic acid (I) or its salts as stabiliser.
USE/ADVANTAGE - The stabilised aq. **H2O2** is not degradable by metal ions, esp. ions present in the soln. water or the tank walls or containers used to prepare, store or ship the soln. It does not suffer light-induced degradation when shipped in translucent containers, esp. when acetanilide is also present. The stabilised aq. **H2O2** at various concns. is used for rocket propulsion, as a bleaching agent, in pharmaceutical prepns., mouthwashes and dentifrices, in a **peroxidase** stain for biological cells, in high-speed automated biomedical analytical systems etc.
0/0

FS CPI
FA AB; DCN
MC CPI: **B05-C08**; B10-A09B; B12-K04; B12-L04; B12-M06; D08-B08; D11-B01B; E10-A09B6; E10-A09B7; **E31-E**; **K04-C01**
ABEQ EP 218097 B UPAB: 19930922
A stabilized aqueous **hydrogen peroxide** solution having a pH above 1 and below 7, characterized in that said solution comprises **hydrogen peroxide**, acetanilide and an aromatic polysulfonic acid or salt thereof.
ABEQ US 4744968 A UPAB: 19930922
An aq **H2O2** soln. pref. contg. 0.01-30, esp. 0.1-0.5% **H2O2**, having a pH below 7 and contg. up to 2 ppm Fe (3) ions is stabilised by adding 0.74-2.22, pref. 1.11-1.85 mmol/ltr acetanilide and 0.86-1.62, pref. 1.05-1.43 mmol/ltr o-benzene disulphonic acid (salt).
ADVANTAGE - metal ions are effectively complexed allowing the soln. to be pumped, stored and shipped, esp. in translucent bottles, without degradation.

L102 ANSWER 5 OF 6 WPIX (C) 2003 THOMSON DERWENT
AN **1985-263193** [42] WPIX
DNN **N1985-196782** DNC **C1985-114086**
TI Detector kit for nerve gases and other cholinesterase inhibitors - with support carrying cholinesterase and substrate surface for folding and contact with the enzyme.
DC B04 D16 J04 **K02** S03
IN BERGEK, S; MARTENSSON, K
PA (DAHL-I) DAHLGREN E
CYC 14
PI WO 8504424 A 19851010 (198542)* EN 13p
RW: AT BE CH DE FR GB IT LU NL SE
W: AU JP US
SE 8401798 A 19851003 (198547)
AU 8542307 A 19851101 (198607)
EP 177600 A 19860416 (198616) EN
R: AT BE CH DE FR GB IT LU NL SE
JP 61501679 W 19860814 (198639)
CA 1259553 A 19890919 (198943)
ADT WO 8504424 A WO 1985-SE158 19850402; JP 61501679 W JP 1985-501789 19850402
PRAI SE 1984-1798 19840402
REP DE 1673318; DE 2650213; FR 1604966; GB 1277193; GB 1570098; NL 7512939; US 3689224; US 3809617; US 4120754; US 4324858
IC C12N011-12; C12Q001-46; G01N031-22
AB WO 8504424 A UPAB: 19930925
Detector kit for indication of nerve gases and other choline-esterase inhibitors consists of a support having a surface carrying choline esterase (I) and a substrate (II) surface for the (I). The kit is foldable so that the surfaces can be brought into abutting engagement with each other.
USE/ADVANTAGE - The detector kit is simple to use and can be produced economically and simply. The kit may be used in wartime and it is of an easily handled size and only simple movements are necessary to use it, as the user may be wearing protective clothing and may be nervous etc..

1/6
FS CPI EPI
FA AB
MC CPI: **B04-B02C3**; B04-B04F; **B05-C08**; B11-C08; B12-K04;
D05-A01; J04-C04; **K02-A**
EPI: S03-E09E; S03-E14H9

L102 ANSWER 6 OF 6 WPIX (C) 2003 THOMSON DERWENT
AN **1980-88319C** [49] WPIX
TI **Peroxidase** catalysed test reactions used in enzyme immunoassay - are terminated, to prevent atmospheric oxidn, by adding an alkali metal bi-sulphite.
DC B04 D16 J04
IN HEVEY, R C; MALMROS, M K; PETKO, W W
PA (CLBC) CALBIOCHEM BEHRING
CYC 1
PI US 4234680 A 19801118 (198049)*
PRAI US 1979-63178 19790803
IC C12N009-99; C12Q001-66
AB US 4234680 A UPAB: 19930902
Peroxidase catalysed colourimetric reactions used in **peroxidase** labelled enzyme immunoassay can be terminated by adding an alkali metal metabisulphite (I).
Due to cheapness and ready availability, the most commonly used **peroxidase** is horseradish **peroxidase**. However, this substance not only catalyses the conversion of a non-coloured substrate to a coloured one in the presence of **H2O2**, but also to some extent in the presence of atmospheric oxygen. Once the reaction is complete any further colour change due to atmospheric oxygen can be prevented by adding a terminating substance. Such prior art substances are H2SO4 or NaN3, but (I) of the present invention do not have the corrosive or **explosive** disadvantages of these two compounds. The assay is esp. for the determn. of human IgE.
FS CPI
FA AB
MC CPI: **B04-B02C2**; B05-C05; B10-B01A; B10-B02A; B11-C07B; B12-K04;
D05-A02; J04-B01

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L103 ANSWER 1 OF 1 DPCI (C) 2003 THOMSON DERWENT
AN 1999-550873 [46] DPCI
DNC C1999-160654
TI Detecting peroxide-based explosive in sample.
DC D16 E19 J04 K04
IN ITZHAKY, H; KEINAN, E
PA (ITZH-I) ITZHAKY H; (KEIN-I) KEINAN E
CYC 84
PI WO 9943846 A1 19990902 (199946)* EN 19p C12Q001-28 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD

GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
UA UG US UZ VN YU ZW

AU 9926372 A 19990915 (200004) C12Q001-28
ADT WO 9943846 A1 WO 1999-IL112 19990224; AU 9926372 A AU 1999-26372 19990224
FDT AU 9926372 A Based on WO 9943846
PRAI IL 1998-123451 19980225
IC ICM C12Q001-28
FS CPI

CTCS CITATION COUNTERS

PNC.DI	0	Cited Patents Count (by inventor)
PNC.DX	3	Cited Patents Count (by examiner)
IAC.DI	0	Cited Issuing Authority Count (by inventor)
IAC.DX	2	Cited Issuing Authority Count (by examiner)
PNC.GI	0	Citing Patents Count (by inventor)
PNC.GX	0	Citing Patents Count (by examiner)
IAC.GI	0	Citing Issuing Authority Count (by inventor)
IAC.GX	0	Citing Issuing Authority Count (by examiner)
CRC.I	0	Cited Literature References Count (by inventor)
CRC.X	2	Cited Literature References Count (by examiner)

CDP CITED PATENTS UPD: 20000321

Cited by Examiner

CITING PATENT	CAT	CITED PATENT	ACCNO
WO 9943846	A	A GB 1177516 A	1968-95984P/00
		PA: (CHCC) CHISSO CORP	
		A GB 2314156 A	1998-011741/02
		PA: (MINA) UK SEC FOR DEFENCE	
		IN: HILEY, R W	
		A WO 7900122 A	1979-25893B/13
		PA: (FOSP-N) FOSPUR LTD	
		IN: KEEN, R C; PITT, M J	

REN LITERATURE CITATIONS UPR: 20000321

Citations by Examiner

CITING PATENT	CAT	CITED LITERATURE
WO 9943846	A	DATABASE CHEMABS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US KEUCHEL, CLAUDIA ET AL: "Enzyme-linked immunosorbent assay for the determination of 2,4,6-trinitrotoluene and related nitroaromatic compounds" XP002107241 & ANAL. SCI. (1992), 8(1), 9-12 CODEN: ANSCEN;ISSN: 0910-6340,
WO 9943846	A	DATABASE CHEMABS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US FERNANDO, TUDOR ET AL: "Biological decontamination of water contaminated with explosives by Phanerochaete chrysosporium" XP002107242 & GAS, OIL, COAL, ENVIRON. BIOTECHNOL. 3, [PAP. IGT'S INT. SYMP.], 3RD (1991), MEETING DATE 1990, 193-206. EDITOR(S): AKIN, CAVIT;SMITH,

JARED PUBLISHER: IGT, CHICAGO, ILL. CODEN: 57IIA8,

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=> fil wpix
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L107 ANSWER 1 OF 3  WPIX (C) 2003 THOMSON DERWENT
AN   1998-011741 [02]   WPIX
DNN  N1998-050011       DNC C1998-022258
TI   Detection of energetic, preferably explosive, material in a sample -
     comprises using a light detector to detect emitted light from a sample
     heated inside an evacuated chamber..
DC   J04 K04 S03
IN   HILEY, R W
PA   (MINA) UK SEC FOR DEFENCE; (MINA) UK SEC FOR DEFENCE EVALUATION & RES AGEN
CYC  25
PI   GB 2314156     A  19971217 (199802)*      17p    G01N033-22      <--
     WO 9747958     A1 19971218 (199805)  EN   25p    G01N021-71
        RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
         W: BR CA CN GB IL JP US
     ZA 9705179     A  19980325 (199819)       23p    G01N000-00
     GB 2328740     A  19990303 (199911)              G01N021-71
     EP 904531      A1 19990331 (199917)  EN          G01N021-71
         R: CH DE GB IE IT LI NL
     GB 2328740     B  20000607 (200031)              G01N021-71
     JP 2000512755 W  20000926 (200051)       25p    G01N033-22
     US 6245576     B1 20010612 (200135)              G01N021-71
     IL 127206      A  20011031 (200174)              G01N021-71
     EP 904531      B1 20020925 (200271)  EN          G01N021-71
         R: CH DE GB IE IT LI NL
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DE 69715843 E 20021031 (200279) G01N021-71
ADT GB 2314156 A GB 1996-12241 19960612; WO 9747958 A1 WO 1997-GB1555 19970610; ZA 9705179 A ZA 1997-5179 19970611; GB 2328740 A WO 1997-GB1555 19970610, GB 1998-25065 19981117; EP 904531 A1 EP 1997-925181 19970610, WO 1997-GB1555 19970610; GB 2328740 B WO 1997-GB1555 19970610, GB 1998-25065 19981117; JP 2000512755 W WO 1997-GB1555 19970610, JP 1998-501346 19970610; US 6245576 B1 WO 1997-GB1555 19970610, US 1998-180953 19981118; IL 127206 A IL 1997-127206 19970610; EP 904531 B1 EP 1997-925181 19970610, WO 1997-GB1555 19970610; DE 69715843 E DE 1997-615843 19970610, EP 1997-925181 19970610, WO 1997-GB1555 19970610
FDT GB 2328740 A Based on WO 9747958; EP 904531 A1 Based on WO 9747958; GB 2328740 B Based on WO 9747958; JP 2000512755 W Based on WO 9747958; US 6245576 B1 Based on WO 9747958; IL 127206 A Based on WO 9747958; EP 904531 B1 Based on WO 9747958; DE 69715843 E Based on EP 904531, Based on WO 9747958
PRAI GB 1996-12241 19960612
IC ICM G01N000-00; G01N021-71; G01N033-22
ICS G01N021-76
AB GB 2314156 A UPAB: 19980216
An energetic material in a sample is detected by introducing the sample into a chamber at under 20 mbar where it is heated and emitted light is detected. An apparatus is also claimed comprising a chamber (4) having at least one wall with a window (8) transparent to visible radiation, a device (5) maintaining a vacuum in the chamber and a detector (10) for any light emitted from the sample in the chamber.

ADVANTAGE - The method gives greater selectivity than prior art methods as there is no need to supply any external energetic species to aid the chemiluminescent emission and there is no need for chromatographic separation before the sample is introduced into the detector. Emission detection is much less effected by thermal noise than is the near IR emission from the NO/O3 reaction as emission is in the blue region of the spectrum. The light detector used can be smaller, more inexpensive and more robust and there is less need to filter the light passing into the detector.

(EPI codes added in week 9807)

Dwg.1/8
FS CPI EPI
FA AB; GI
MC CPI: J04-C04; K04-E
EPI: S03-E04E; S03-E09C1; S03-E09C7X; S03-E14E3

L107 ANSWER 2 OF 3 WPIX (C) 2003 THOMSON DERWENT
AN 1979-25893B [13] WPIX
TI Identification of hazardous nature of unknown chemicals - using a test kit suitable for a non-chemist to determine explosive, corrosive or poisonous nature of a spillage.
DC J04 S03 S05
IN KEEN, R C; PITT, M J
PA (FOSP-N) FOSPUR LTD
CYC 6
PI WO 7900122 A 19790322 (197913)* <--
RW: CH DE FR GB SE
W: US
EP 7348 A 19800206 (198006)
R: CH DE FR GB SE
PRAI GB 1977-36569 19770901
REP FR 1010505; GB 494882; US 3672842; US 3979182; US 4092119
IC G01N021-06; G01N033-00
AB WO 7900122 A UPAB: 19930901
The presence of an environmental hazard in an unknown material is determined by a person not skilled in chemistry, e.g. fireman or policeman, using several different agents each adapted to interact with a material having a partic. hazard and to give an indication of the presence

or absence of the hazard.

The presence of a strongly acidic or caustic material is indicated by a substrate, e.g. filter paper, impregnated with a mixt. of Titan Yellow and Metanil Yellow deposited from an aq. soln. The presence of halocarbons or N contg. organic cpds. is indicated by a substrate impregnated with a Cu sulphate soln. The presence of Hg, Ag, Au or Pt is indicated by a substrate impregnated with Na acetate in aq. soln. and having on it a colour strip comprising p-dimethylamino-benzylidene-rhodamine deposited from soln. in acetone. A test tube having at or adjacent the closed end a vent hole in the side wall is used in the analysis of unknown materials.

The method can be used for rapid checking of spillages from road vehicles, water supplies, trade effluent, waste tips and unknown material in stores and warehouses.

FS CPI EPI
FA AB
MC CPI: J04-B01B

L107 ANSWER 3 OF 3 WPIX (C) 2003 THOMSON DERWENT
AN 1968-95984P [00] WPIX
TI Decomposition of explosive peroxides in oligomers and.
DC A23 A35 A41 E13
PA (CHCC) CHISSO CORP
CYC 5
PI NL 6707739 A (196800)*
BE 699368 A (196801)
FR 1525596 A (196801)
GB 1177516 A (197002) <--
JP 52034607 B 19770905 (197739)
PRAI JP 1966-35595 19660602
IC B01J027-10; C07C069-67; C08G063-08
AB NL 6707739 A UPAB: 19930831
Oligomers and/or polyesters of epsilon-caprolactone, which contains explosive peroxides and possibly epsilon - caprolactone, ar treated with an aqueous acid solution which contains cuprous and/or ferrous ions; the peroxides are hydrolysed in this way and the danger of explosion is removed.

Epsilon -Caprolactone can then be safely isolated from the mixture, or its derivatives can be converted into epsilon -caprolactam by reaction with ammonia.

The cuprous and ferrous ions can be supplied in any suitable form, particularly as salts of inorganic acids, especially as the sulphates and/or chlorides; the chlorides are preferred. The solubility of the chlorides can be increased by the addition of a salt, such as NaCl or KCl. Suitable acids are HCl, H2SO4, H2SO3 or acetic acid. The decomposition may be effected at room temperature, or may be accelerated by using temperatures of 40-80 deg.C.

FS CPI
FA AB
MC CPI: A05-E; A10-G01

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FILE LAST UPDATED: 14 Feb 2003 (20030214/ED)

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L111 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS
AN 1992:10880 HCAPLUS
DN 116:10880
TI **Biological decontamination** of water contaminated with **explosives** by **Phanerochaete chrysosporium**
AU Fernando, Tudor; Aust, Steven D.
CS Biotechnol. Cent., Utah State Univ., Logan, UT, 84322-4700, USA
SO Gas, Oil, Coal, Environ. Biotechnol. 3, [Pap. IGT's Int. Symp.], 3rd (1991), Meeting Date 1990, 193-206. Editor(s): Akin, Cavit; Smith, Jared. Publisher: IGT, Chicago, Ill.
CODEN: 57IIA8
DT Conference
LA English
CC 61-2 (Water)
Section cross-reference(s): 50
AB Biodegrdn. of TNT, RDX, HMX was demonstrated in contaminated water by the white rot fungus Phanerochaete chrysosporium. At an initial concn. of 30 ppm TNT and RDX, 46-51% and 67% of [14C]TNT and [14C]RDX, resp., were converted to 14CO2 over a 30-day incubation period. The amt. of HMX degraded by cultures contg. 1000 ppm was 20%, over a 30-day period. HPLC anal. of the culture exts. of [14C]TNT and HMX revealed polar metabolite formation, but no metabolites were obsd. in [14C]RDX contaminated cultures. In control cultures where the fungus was not included, 97-98% of the initial radioactivity added to the cultures was recovered as undegraded [14C]TNT or [14C]RDX and in the case of HMX as non-radiolabeled HMX. When [14C]TNT or [14C]RDX were incubated with a pure lignin peroxidase (LiP) isoenzyme, i.e., LiP isoenzyme H2, metabolites were formed that were more polar than TNT or RDX. Metabolites formed from the incubations of [14C]TNT with LiP H2 were identical to those formed in cultures. One major metabolite was formed upon incubation of [14C] RDX with LiP H2, but none were obsd. in culture exts. Enzymic incubation of [14C]TNT with Mn dependent peroxidase (MnP) isoenzyme H4 did not form 2 major metabolites that were obsd. with LiP H2 and in cultures. However, identical metabolites were obsd. with enzymic incubations of RDX with LiP H2 and MnP H4.
ST explosive water pollution biodegrdn fungus; TNT water pollution fungus biodegrdn; RDX water pollution fungus biodegrdn; HMX water pollution fungus biodegrdn; enzymic degrdn explosive water pollution
IT Phanerochaete chrysosporium
(biodegrdn. of explosives by, water pollution in relation to)
IT Water pollution
(by explosives, biodegrdn. by Phanerochaete chrysosporium in)
IT Enzymes
RL: OCCU (Occurrence)
(isoenzymes, biodegrdn. of explosives by, water pollution in relation to)
IT 118-96-7, TNT 121-82-4, RDX 2691-41-0, HMX

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     RL: OCCU (Occurrence)
        (biodegrdn. of, by Phanerochaete chrysosporium, water pollution in
        relation to)
IT   9003-99-0, Peroxidase   42613-30-9, Lignin peroxidase
     RL: OCCU (Occurrence)
        (isoenzyme, biodegrdn. of explosives by, water pollution in relation
        to)


=> d his

     (FILE 'HOME' ENTERED AT 13:27:00 ON 15 FEB 2003)
               SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 13:27:15 ON 15 FEB 2003
               E WO99-IL112/AP,PRN
L1           1 S E3,E4
               E KEINAN E/AU
L2         154 S E3,E4
               E ITZHAKY H/AU
L3           6 S E4

     FILE 'REGISTRY' ENTERED AT 13:28:16 ON 15 FEB 2003
L4           1 S HYDROGEN PEROXIDE/CN
L5           1 S PEROXIDASE/CN
L6        2305 S ?PEROXIDAS?/CNS
L7           1 S SULFURIC ACID/CN
L8           8 S (HYDROGEN CHLORIDE OR HYDROGEN BROMIDE OR PERCHLORIC ACID OR
L9           1 S ACETIC ACID/CN
L10          1 S TRIFLUOROACETIC ACID/CN
L11          1 S 1073-91-2
L12          1 S 17088-37-8
L13          1 S DIMETHYL SULFOXIDE/CN
L14          1 S DIMETHYLFORMAMIDE/CN
L15         12 S 87-66-1 OR 89-57-6 OR 90-05-1 OR 95-54-5 OR 119-90-4 OR 525-6
L16          2 S 91-95-2 OR 521-31-3

     FILE 'HCAPLUS' ENTERED AT 13:43:43 ON 15 FEB 2003
L17      69782 S L4
L18     161748 S HYDROGEN PEROXIDE OR H2O2
L19      30792 S L5
L20      78628 S L6
L21      77710 S ?PEROXIDASE?
L22      13125 S HORSERADISH?
L23      12502 S L20,L21 AND L22
L24      15027 S L17,L18 AND L19-L23
               E EXPLOSIVE/CT
L25       3812 S E14-E30
L26          1 S E3-E12
               E E13+ALL
L27      13659 S E4,E3+NT
L28      17811 S E14+NT OR E15+NT OR E16+NT OR E18+NT OR E19+NT OR E20+NT OR E
L29      16628 S E2+NT
               E E17+ALL
L30      20127 S E2,E1+NT
L31        268 S E12+NT
               E EXPLOSIVE/SC,SX
               E EXPLO/SC,SX
L32      75270 S E5-E13
               E E11+ALL
L33      44702 S E2
               E EXPLO/SC,SX
               E E13+ALL
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L34      332976 S E2
                E EXPLO/SC,SX
                E E10+ALL
L35       11903 S E2
                E EXPLO/SC,SX
                E E6+ALL
L36       63358 S E4-E7
L37           6 S L24 AND L25-L36
L38           5 S L37 NOT TYROSINE
L39          31 S L19-L23 AND L25-L36
L40          25 S L39 NOT L37
L41           1 S L39 AND L7,L8
L42           1 S L39 AND (H2SO4 OR (SULFURIC OR SULPHURIC OR SULFONIC OR SULPH
L43           1 S L39 AND (HNO3 OR H3PO4 OR H3PO2 OR HCLO4 OR HBR OR HCL OR (PH
L44           1 S L39 AND STRONG ACID
L45           1 S L39 AND ORGANIC(L)SOLVENT
L46           1 S L39 AND (ACETIC ACID OR DMSO OR DMF OR DIMETHYLSULFOXIDE OR D
L47           3 S L39 AND (CARBOXYLIC ACID OR TRIFLUOROACETIC ACID OR LOWER(L)A
L48           2 S L39 AND BUFFER?
L49           1 S L39 AND (CITRATE(S)PHOSPHATE(S)BUFFER?)
L50           3 S L39 AND L9-L16
L51           6 S L41-L50
L52           3 S L38 AND L51
                SEL RN L1

     FILE 'REGISTRY' ENTERED AT 13:59:58 ON 15 FEB 2003
L53          33 S E1-E33

     FILE 'HCAPLUS' ENTERED AT 14:00:04 ON 15 FEB 2003
L54          13 S L53 AND L39
L55           1 S L2,L3 AND L25-L36
L56           1 S L2,L3 AND L39
L57           1 S L54 AND L55,L56
L58           5 S L38,L57
L59          26 S L39-L52 NOT L58
                SEL DN AN 9 18 21
L60           3 S E34-E42
L61           8 S L58,L60 AND L1-L3,L17-L52,L54-L60
L62           7 S L53 AND L61
L63           8 S L61,L62
                E PEROXIDE/CT
L64         164 S L25-L36 AND E30-E79
                E E30+ALL
L65        1799 S L25-L36 AND E6,E5+NT
L66        1799 S L64,L65
L67           9 S L66 AND ENZYM?/SC,SX,CW,BI
L68           3 S L66 AND L19-L22
L69          10 S L67,L68
L70           2 S L69 AND L63
L71           8 S L69 NOT L70
                SEL DN AN 5
L72           1 S E1-E3 AND L71
L73           9 S L63,L70,L72
L74           9 S L73 AND L1-L3,L17-L52,L54-L73
L75           6 S L74 AND ENZYM?
L76           9 S L74,L75

     FILE 'HCAPLUS' ENTERED AT 14:11:08 ON 15 FEB 2003

     FILE 'WPIX' ENTERED AT 14:13:44 ON 15 FEB 2003
                E C12Q001-28/IC,ICM,ICS
L77        1134 S E3-E5
                E C12Q001-28/ICA,ICI
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L78          100 S E3,E4
                 E C12Q001:28/ICI
L79         4633 S L21/BIX
L80          676 S (B04-L03B OR C04-L03B)/MC
L81         4061 S (B04-B02C2 OR C04-B02C2)/MC
L82         2716 S (B04-L03# OR C04-L03#)/MC
L83        19059 S (B04-L? OR C04-L?)/MC
L84        19340 S (B04-B02C? OR C04-B02C?)/MC
L85        11154 S V811/M0,M1,M2,M3,M4,M5,M6
L86        45753 S L77-L85
L87         1185 S L86 AND (HYODRGEN PEROXIDE OR H2O2)/BIX
L88         1656 S L86 AND (1732/DRN OR R01732/DCN)
L89         1512 S L86 AND (B05-C08 OR C05-C08 OR "E31-E" OR B10-A04 OR C10-A04
L90         2843 S L86 AND ?PEROXIDE?/BIX
L91         4455 S L87-L90
L92           17 S L91 AND EXPLO?/BIX
                 SEL DN AN 6 10 16 17
L93            4 S L92 AND E1-E9
L94           29 S L86 AND "E10-A04B"/MC
L95         4456 S L91,L94
L96           34 S L95 AND K?/MC
L97           34 S L95 AND K?/DC
L98           33 S L96,L97 NOT L92
                 SEL DN AN 28 32
L99            2 S L98 AND E10-E14
L100           6 S L93,L99 AND L77-L99
L101           4 S L100 AND HYDROGEN PEROXIDE/BIX
L102           6 S L100,L101

     FILE 'WPIX' ENTERED AT 14:36:19 ON 15 FEB 2003

     FILE 'DPCI' ENTERED AT 14:37:01 ON 15 FEB 2003
                 E WO9943846/PN
L103           1 S E3

     FILE 'DPCI' ENTERED AT 14:37:11 ON 15 FEB 2003

     FILE 'WPIX' ENTERED AT 14:37:42 ON 15 FEB 2003
                 E GB1177516/PN
L104           1 S E3
                 E GB2314156/PN
L105           1 S E3
                 E WO7900122/PN
L106           1 S E3
L107           3 S L104-L106 NOT L102

     FILE 'WPIX' ENTERED AT 14:38:40 ON 15 FEB 2003

     FILE 'HCAPLUS' ENTERED AT 14:40:48 ON 15 FEB 2003
L108           3 S ANAL SCI/JT AND 1992/PY AND (8 AND 1 AND 9)/SO
L109           1 S L108 AND 12/SO
L110           1 S (BIOLOGICAL DECONTAMINATION AND EXPLOSIVES AND PHANEROCHAETE
L111           1 S L109,L110 NOT L76

     FILE 'HCAPLUS' ENTERED AT 14:43:19 ON 15 FEB 2003
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